

REMARKS

This is a full and timely response to the outstanding final Office Action mailed October 28, 2005. Through this response, claims 29, 32, and 52 have been amended, claim 55 has been canceled without prejudice, waiver, or disclaimer, and claim 56 has been added. Reconsideration and allowance of the application and pending claims 29-54 and 56 are respectfully requested.

I. Claim Rejections - 35 U.S.C. § 102(b)**A. Statement of the Rejection**

Claims 29, 31-34, 41, and 43-45 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by *Boveda et al.* ("*Boveda*," A 0.7-3 GHz GaAs QPSK/QAM Direct Modulator). Applicants respectfully traverse this rejection.

B. Discussion of the Rejection

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(b).

In the present case, not every feature of the claimed invention is represented in the *Boveda* reference.

Independent Claim 29

Claim 29 recites (with emphasis added):

29. (Currently Amended) A polyphase filter, comprising:
a first phase splitting filter comprising a first RC network, the first phase splitting filter configured to provide a first output;
a second phase splitting filter comprising a second RC network, the second phase splitting filter configured to provide a second output;
a first variable resistance separate from the first RC network and the second RC network, the first variable resistance connected across the first output; and
circuitry capable of detecting the phase of the outputs produced by the first and second outputs, and circuitry capable of adjusting the first variable resistance to produce a desired phase difference between the first output and the second output.

Applicants respectfully submit that *Boveda* does not disclose at least the above emphasized claim features. Accordingly, Applicants respectfully request that the rejection to claim 29 be withdrawn. Further, Applicants respectfully request that the next Office Action provide further clarity as to which portions of a reference are being equated to the explicit claim features.

Because independent claim 29 is allowable over *Boveda*, dependent claims 30-40 are allowable as a matter of law for at least the reason that the dependent claims 30-40 contain all elements of their respective base claim. See, e.g., *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Independent Claim 41

Claim 41 recites (with emphasis added):

41. A polyphase filter, comprising:
a first phase splitting filter that produces a first output, the first phase splitting filter comprising a first RC network;
a second phase splitting filter that produces a second output, the second phase splitting filter comprising a second RC network;
a first variable resistance connected across the first output and a second variable resistance connected across the second output, the first variable resistance separate from the first RC network and the second variable resistance separate from the second RC network; and

a detector that determines the phase of the first and second outputs, and adjusts the first variable resistance and the second variable resistance to produce a desired phase difference between the first output and the second output.

Applicants respectfully submit that *Boveda* does not disclose at least the above emphasized claim features. In particular, the final Office Action refers to Figure 3 of *Boveda* for support of alleged anticipation of claim 41. However, Applicants wish to point out that the “output” of the second RC network, assuming *arguendo* R3 and C3 (or even R3, C3, R4 and C4) is being equated to the “second RC network,” does not have a *variable resistance* connected across it, but instead, amplifiers are connected across the output. Thus, Applicants respectfully request that the rejection to claim 41 be withdrawn. Further, Applicants respectfully request that the next Office Action provide further clarity as to which portions of a reference are being equated to the explicit claim features.

Because independent claim 41 is allowable over *Boveda*, dependent claims 42-51 are allowable as a matter of law.

Due to the shortcomings of the *Boveda* reference described in the foregoing, Applicants respectfully assert that *Boveda* does not anticipate Applicants’ claims. Therefore, Applicants respectfully request that the rejection of these claims be withdrawn.

II. Claim Rejections - 35 U.S.C. § 102(e)

Claim 55 has been rejected under 35 U.S.C. § 102(e) as being anticipated by *Nash* (“*Nash*,” U.S. Pat. No. 6,317,589 B1). Through cancellation of claim 55, Applicants respectfully submit that the rejection to claim 55 has been rendered moot.

III. Claim Rejections - 35 U.S.C. § 103(a)

A. Statement of the Rejection

Claims 30 and 42 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Boveda* as applied to claims 1, 41 above, and further in view of *Havens et al.* (“*Havens*,” U.S. Pat. No. 6,313,680 B1). Claims 35 and 46 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Boveda* as applied to claims 32, 41, respectively above, and further in view of *Havens*. Claims 36 and 47 have been rejected under 35 U.S.C. § 103(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over *Boveda* as applied to claims 32, 41, respectively above. Claims 37, 38, and 48 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Boveda* as applied to claims 29, 41, respectively above, and further in view of *Havens*. Claims 39 and 50 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Boveda* as applied to claims 29, 41, respectively above in view of *Nash* (“*Nash*,” U.S. Pat. No. 6,316,589 B1) and further in view of *Havens*. Claims 40 and 51 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Boveda* as applied to claims 29, 41, respectively above in view of *Nash* and further in view of *Havens*. Claims 52-54 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Baker et al.* (“*Baker*,” U.S. Pat. 6,606,483 B1) in view of *Proctor, Jr. et al.* (“*Proctor*,” U.S. Pat. 5,929,704) and further in view of *Boveda*. Applicants respectfully traverse these rejections.

B. Discussion of the Rejection

As has been acknowledged by the Court of Appeals for the Federal Circuit, the U.S. Patent and Trademark Office (“USPTO”) has the burden under section 103 to establish a *prima facie* case of obviousness by showing some objective teaching in the prior art or generally available

knowledge of one of ordinary skill in the art that would lead that individual to the claimed invention. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). The Manual of Patent Examining Procedure (MPEP) section 2143 discusses the requirements of a *prima facie* case for obviousness. That section provides as follows:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teaching. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must be found in the prior art, and not based on applicant's disclosure.

In the present case, it is respectfully submitted that a *prima facie* case for obviousness has not been established. As to claims 30-51, since *Boveda* does not disclose teach or suggest at least the above-emphasized features of independent claims 29 and 41 as described above, and because the secondary references fail to remedy these deficiencies, Applicants respectfully submit that claims 30-51 are patentable over the art of record.

With regard to independent claim 52, Applicants claim as follows:

52. A communication system, comprising:

a transmitter and a receiver, the transmitter comprising an input, an analog-to-digital converter, a digital signal processor, a digital-to-analog converter and an RF signal generator, the transmitter modulating an RF carrier with a signal provided to the transmitter input and transmitting the modulated RF carrier, the receiver comprising an RF input, a local oscillator, a polyphase filter connected to an output of the local oscillator, the polyphase filter producing first and second outputs from the local oscillator output, a mixer that combines the RF input with the first and second outputs of the polyphase filter, baseband circuitry, an analog-to-digital converter, and a digital signal processor that demodulates an output of the analog-to-digital converter, and produces a demodulated output,

the polyphase filter including:

a first phase splitting filter comprising a first RC network, the first phase splitting filter configured to provide a first output;

a second phase splitting filter comprising a second RC network, the second phase splitting filter configured to provide a second output;

a first variable resistance separate from the first RC network and the second RC network, the first variable resistance connected across the first output; and

circuitry capable of detecting the phase of the outputs produced by the first and second outputs, and circuitry capable of adjusting the first variable resistance to produce a desired phase difference between the first output and the second output.

For similar reasons presented above pertaining to like limitations found in independent claim 29, Applicants respectfully submit that the art of record fails to disclose, teach, or suggest at least the above emphasized claim features, and thus respectfully requests that the rejection to independent claim 52 and dependent claims 53-54 be withdrawn.

In summary, it is Applicants' position that a *prima facie* for obviousness has not been made against Applicants' claims. Therefore, it is respectfully submitted that each of these claims is patentable over the art of record and that the rejection of these claims should be withdrawn.

IV. Canceled Claims

As identified above, claim 55 has been canceled from the application through this Response without prejudice, waiver, or disclaimer. Applicants reserve the right to present this canceled claim, or variants thereof, in continuing applications to be filed subsequently.

V. New Claims

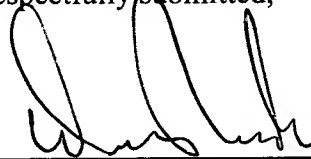
As identified above, claim 56 has been added into the application through this Response. Applicants respectfully submit that this new claim describes an invention novel and unobvious in view of the prior art of record and, therefore, respectfully request that this claim be held to be

allowable. Further, it is respectfully submitted that no new matter has been added through this amendment.

CONCLUSION

Applicants respectfully submit that Applicants' pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. Any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,



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